

NEW TERMITE RECORDS FOR LOWER CALIFORNIA

BY S. F. LIGHT

Banks and Snyder, in their "Revision of Nearctic Termites" (1920), mention but two termites from Lower California, *Kaloterme hubbardi* Banks (Cape San Lucas) and *Kaloterme occidentis* Walker (Angel de la Guardia Island and Cape San Lucas).

Through the kindness of Professor J. Grinnell, director of the Museum of Vertebrate Zoölogy of the University of California, and Mr. Chester C. Lamb, collector of the Museum, I have received for study three lots of termites collected by Mr. Lamb during the years 1926-1928.

These collections, small as they are, have added very materially to our knowledge of termite distribution, extending the known southern range of several species by many hundreds of miles, and serve to give some earnest of the interesting finds awaiting the termite collector in this region. I give below a list of the six species contained in these collections with localities, dates of collection and location of colonies, and, following the list, a discussion of the known range of each species.

1. *Termopsis nevadensis* Hagen. June 19, 1926, Vallecitos, San Pedro Martir Mountains (about 150 miles south of the border), 7500 feet, in rotten stump of Jeffrey Pine, all castes.
2. *Kaloterme occidentis* Walker. June 1, 1927, Santo Domingo Landing (on west coast about 400 miles south of the border), in Yucca, nymphs only; December 1928, La Paz (on east coast about 150 miles from tip of peninsula), from a Palo Verde stump, soldiers and nymphs.
3. *Kaloterme minor* Hagen. May 26, 1926, El Cajon Canyon, east base of San Pedro Martir Mountains (about 150 miles south of border), 3200 feet, "in partially dead willow stump," all castes; same locality and date, "in limb of willow," soldiers and nymphs.
4. *Kaloterme hubbardi* Banks. October 16, 1928, Todos

Santos (on west coast about 60 miles from tip of peninsula), two dealates, "crawling on work table at night."

5. *Neotermes simplicicornis* Banks, April 5, 1926, San Felipe Bay (130 miles south of Mexicali), "in dead mesquite stump," soldiers and nymphs.
6. *Reticulitermes tibialis* Banks. December 6, 1928, El Sauce, Victoria Mountains (at tip of peninsula), 4000 feet, in fallen oak limb, soldiers and workers.

It will be noted that we have here, as representatives of the termite fauna of Lower California, six species all of which occur in the nearctic region, several of which range into northern California, one as far north as Vancouver Island and another into Montana, and that no tropical species have been collected so far.

TERMOPSIS NEVADENSIS Hagen

The two coast species of *Termopsis*, *T. angusticollis* Hagen and *T. nevadensis* Hagen, have been distinguished (Banks and Snyder, 1920) on the basis of size and color difference between the alates. Color differences fail in incompletely pigmented individuals from nest series. Size differences, therefore, have been largely depended upon for diagnosing the two species. Study of large series shows that the size range for *T. angusticollis* must be revised downward and that for *T. nevadensis* upward, and hence many earlier determinations are in doubt. The alates collected by Mr. Lamb have been somewhat of a puzzle, lacking the dark pigmentation characteristic of *T. nevadensis* and ranging in size as they do into the lower limits for *T. angusticollis*. Unpublished studies by Mr. G. B. Castle and Miss Ethel Craig seem to present satisfactory criteria for differentiating the soldiers and the nymphs of these two species. On the basis, therefore, of head shape and other characters of the alates and of the characters of the single soldier included in the collection and the characters of the nymphs, I feel justified in diagnosing this collection as *T. nevadensis*.

Previous to this report, Los Angeles stood as the southernmost reported locality for *T. angusticollis* and Monterey for *T. nevadensis*. Recent collections made by Mr. G. Edward

Chase of San Diego have shown *T. angusticollis* to occur near sea level at San Diego, and collections by the Termite Investigations Committee show it to occur in the southern mountain ranges. With its northernmost limits in British Columbia, and its present known southern limit in San Diego, this species has a known north and south range of at least 1150 miles. Monterey was the southernmost collection point for *T. nevadensis* until this collection of Mr. Lamb's pushed its range limits 400 miles to the south, giving it a north and south range of about 1250 miles from Vancouver Island in the north to the San Pedro Martir Mountains of Lower California in the south.

KALOTERMES OCCIDENTIS Walker

*Kaloterme*s *occidentis* Walker is a remarkable species, much larger than any other species of the genus *Kaloterme*s, to which it has been reassigned by Banks (1920). The soldiers all have remarkably well-developed wing pads, and on this basis Holmgren (1911) placed it in a new genus *Pteroterme*s. The nymphs also differ in the possession of small but pigmented compound eyes from an early stage. Furthermore, unpublished studies by Mr. W. W. Lewis, made possible by material collected by Mr. Lamb, show that one of the Protozoa of its intestinal fauna belongs to a genus which has not yet been found in a species of *Kaloterme*s s. st., but is found in the species of the genus *Cryptoterme*s. For these reasons it seems possible that a careful study of its morphology may show it not to belong to *Kaloterme*s s. st.

This very interesting species was reported by Banks and Snyder (1920) from Sabino Canyon, the Coyote Mountains and the Baboquivari Mountains in Arizona, from Angel de la Guardia Island in the Gulf of California and from Cape San Lucas at the tip of Lower California. The records from Coyote Mountain and Baboquivari Mountains are not definite, however, since they are based on winged adults which from their size Banks believed to belong to this species, but which were taken flying and hence cannot be allocated to this species with certainty. Material collected from near Douglas, Arizona, by Professors A. A. Nichols and C. T. Vorhies of the University of Arizona, gives another locality for that state. Mr.

Lamb's two collections widen the known range in Lower California.

KALOTERMES MINOR Hagen

Kaloterme minor Hagen was reported by Banks and Snyder (1920) from Niles in Alameda County, from San José and from Monterey County, from Los Angeles and from Palm Springs, Riverside County, in California, and from southeastern Arizona (Pima County). Collections made by me in May 1925 and reported by Snyder (1926) add Copper Butte Canyon near Ray, Arizona, and Prescott, Arizona, as localities for this species, and more recent collections show it to be present in Ash Fork. The collections of the Termite Investigations Committee have shown this species to be common along the Pacific Coast as far north as Westport in Mendocino County. The northernmost known extension of its range is marked by a single collection (Harvey) from Redding, in Shasta County. It is not known to occur in the central San Joaquin Valley, but reappears again around Bakersfield and in the Tehachapi, the San Bernardino Mountains, and other southern mountains. In the Mohave Desert Barstow marks the eastern limit of its range, and in the Colorado Desert Garnet and Palm Springs. Its range is evidently continuous into Arizona, either south through Mexico or north through Nevada. The present collection extends the recorded range of this important economic species about 150 miles to the south, giving it a known north to south range of about 750 miles.

KALOTERMES HUBBARDI Banks

Kaloterme hubbardi was previously reported by Banks and Snyder (1920) from Cape San Lucas. A dealate pair of this species was taken by Mr. Lamb, crawling on his work desk at Todos Santos, on the west coast of Lower California. It has been reported in California (Banks and Snyder, 1920) from San Diego and as far north as San José. Careful search on the part of the Termite Investigations Committee has failed to show its presence in the state save at Blythe on the Colorado River. It is widespread throughout southern and central Arizona and presumably through much of Lower California and the western portion of Mexico proper.

NEOTERMES SIMPLICICORNIS Banks

Neotermes simplicicornis Banks (1920) was known from a single collection by Snyder made in southeastern Texas. No winged forms were taken and Banks placed the species in the genus *Kaloterмес*. This species was taken later in Sabino Canyon in southeastern Arizona, and in 1925 I took it at Ray, in Central Arizona (Snyder, 1926; Light, 1926, 1927). In 1927 the species was collected by the Southern Pacific Railway Company near Indio, Riverside County, California, and again in 1928, at the request of the Termite Investigations Committee, a considerable collection was brought in by Mr. R. M. Alpen from the same locality which contained two alates, not previously known. These showed it to belong to the genus *Neotermes*. Since that time it has been taken in connection with the field investigations of the Termite Investigations Committee (Light, Pickens, Harvey) from the Colorado and Mohave deserts and western Arizona. Its western limits in the deserts have been located at Barstow in the Mohave and Garnet and Palm Springs in the Colorado. In Arizona its known distribution is widened by my collections at Topac and Yucca and near Roosevelt Dam. Mr. Lamb's collection locates it on the western shore of Lower California, about 130 miles south of Mexicali, thus considerably extending the known southern limits of the range of this interesting and economically important species.

RETICULITERMES TIBIALIS

Reticulitermes tibialis was already known to range from Iowa to the Pacific Coast and from western Montana to central Riverside County in California. Its collection by Mr. Lamb at the tip of Lower California adds about 750 miles to its north-south range, bringing it to the amazing total of about 1650 miles. This would seem also to represent the most southerly record for the genus *Reticulitermes*, which is typically holarctic.

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A NEW OLIARUS

BY E. P. VAN DUZEE

Oliarus truncatus Van Duzee, n. sp.

Closely allied to *aridus* and *californicus* but with broader costal areole, the narrow vertex of *californicus* and different male genitalia. Length, 6-6.5 mm.

Male. Vertex slightly narrower and more parallel-sided than in *californicus*; costal areole one-half wider than the adjoining areole, in the allied species these areoles are subequal in width; stigma as in *aridus*, larger and darker than in *californicus*; elytral veins feebly punctate; front as in *aridus*, the pale lateral spots smaller; rostrum exceeding hind coxæ by two-thirds the length of its last segment. Male pygofers shaped as in *californicus* but shorter with the apical margins of the sides truncate, the median notch broad and shallow; plates exceeding the pygofers by half their length, their apical margin truncately rounded, their inner angle subacute; their apical member shaped much as in *aridus* but shorter and transverse, not as produced medially.

Described from the type and six male paratypes, three taken by the writer at La Jolla, California, January 27, 1913, and three taken by Mr. W. S. Wright at San Diego, California, August 21, 1913.

Holotype, male, No. 2622, Mus. Calif. Acad. Sci., collected by E. P. Van Duzee, July 4, 1913, at **Alpine, San Diego County, California.**